

REMARKS

The application has been amended to correct the cited informalities, to distinguish the claimed invention over the cited prior art, and to place the application into a *prima facie* condition for allowance. Substantial care has been taken to avoid the introduction of any new subject matter into the application as a result of the foregoing amendments.

Claims 1 - 8 and 10 - 21 have been rejected under 35 U.S.C. 112, second paragraph, for purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner has stated that the term "substantially exclusively" (appearing immediately after the word "plate"), recited at or about lines 13 - 14 of claim 1, and lines 15 - 16 of claim 15 (after several amendments, line numbering of the claims having become somewhat difficult to track), is purportedly unclear.

Applicant respectfully traverses the Examiner's basis under 35 U.S.C. 112, second paragraph, for rejection of claims 1 - 8 and 10 - 21.

As an initial matter, Applicant notes that the Examiner, in the previous office action, had rejected claims 1 and 15, among others, on the bases that the claims contained subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the very same limitation, which is now being objected to as being indefinite. Applicant notes that this rejection has **not** been maintained. Applicant respectfully submits that for the Examiner to have conceded that the specification does contain antecedent support for the Examiner to conclude that the inventors did have possession of the invention embodied in part by the phrase "substantially exclusively", in the context of the plinon wheels, notwithstanding that those words do not appear in that combination anywhere in the specification, indicates the Examiner understands what the term "substantially exclusively" meant.

Notwithstanding the Examiner's understanding of "substantially exclusively", Applicant will nevertheless explain its understanding of same, in detail. As was

previously addressed in Applicant's Amendment and Communication of April 30, 2007, each of the pinion wheels uses **cylindrical pinion pins** (see ¶ [0033] of the application as published in US 2006/0242316). It is a matter of basic geometry and engineering principles that when a cylindrical object (a pinion pin) bears against a flat surface (e.g., the tooth surface of one of the teeth of blade plate 16), discounting the slight frictional lateral forces caused by the fact that each of the pinion pins also actually moves laterally relative to the blade plate, during the time that each respective pin is in contact with the blade plate, the vast majority of the force imparted by each of the pinion pins to the blade plate is perpendicular to the flat surface of the blade plate; that is, parallel to the direction of movement of the blade plate, being transmitted through the line of contact between the cylindrical pinion pin and the tooth surface. This is an inherent mechanical characteristic that is defined by the use of a pinion wheel with cylindrical pinion pins and a blade plate having teeth defined, at least in part, by flat parallel (or even substantially parallel) tooth surfaces extending normal to the direction of movement of the blade plate.

A cylindrical object, which is bearing against a straight flat tooth surface, regardless of the direction the cylindrical object is being moved, can **only** exert a force on the flat surface, that is **normal** to the flat surface (again, excluding comparatively negligible lateral frictional forces). The Examiner's attention is also directed to the following statement from ¶ [0009] of the application as published: "The toothed edges of the blade plate engage with specially designed pinion wheels to impart a **linear** force to the blade plate thereby causing it to translate into and out of the area within the frame to open and close the damper, depending upon the direction of rotation of the pinion wheels." (Emphasis added).

Applicant, accordingly, respectfully submits that, to one of ordinary skill in the art, that term "linear" could only mean along the direction of movement of the blade plate, as that is substantially the only direction the force **can** be directed, given the structures provided. In view of the foregoing, Applicant submits that there is more than sufficient disclosure in the application as filed, for one of ordinary skill in the art of machine design to recognize that a pinion gear arrangement, such as that shown and

described in the specification of the instant application would result in the pins of the pinion gear (and thus the pinion gear as a whole) would exert forces substantially exclusively in the direction of movement of the blade plate, because, as a practical matter, that is the sole mode in which the disclosed structure **can** function.

In view of the foregoing, Applicant respectfully submits that the term "substantially exclusively" would be so readily understood by one of ordinary skill in the art, in the context of claims 1 and 15 to mean "exclusively, but for minor forces such as lateral frictional forces." Accordingly, the Examiner's bases for rejection of the claims under 35 U.S.C. 112, second paragraph, should be deemed overcome.

Reconsideration and withdrawal of the rejections of claims 1 - 8 and 10 - 21, under 35 U.S.C. 112, second paragraph, are therefore respectfully solicited.

Claims 1 - 8 and 10 - 21 have been rejected under 35 USC 103(a) as being unpatentable over Bachmann et al., US 4,327,893 in view of Imase et al., US 6,023,989. Applicant respectfully traverses the Examiner's substantive bases for rejection of the claims.

The Examiner has acknowledged that the *Bachmann et al.* '893 patent fails to disclose the use of pinion wheels with pinion pins that interact with a toothed rack. However, the Examiner has further stated that "*Imase et al.* teach (sic) the use of a toothed rack having a series of teeth (4) with the teeth having opposing sides that are substantially parallel to one another (side faces of the teeth are parallel to each other and perpendicular to the direction of movement of the plate)." Applicant respectfully traverses the Examiner's characterization of the *Imase et al.* '989 patent reference.

In particular, Applicant respectfully submits that the Examiner's definition and use of the terminology "substantially parallel", in stating that the *Imase et al.* '989 patent reference "teach[es] the use of a toothed rack having a series of teeth (4) with the teeth having opposing sides that are substantially parallel to one another (side faces of the teeth are parallel to each other and perpendicular to the direction of movement of the plate)" appear to be based upon a misinterpretation of the term "side", when considered in the context of the disclosures and teachings of the present application, as well as those of the *Imase et al.* '989 patent reference. It appears that the Examiner

has arrived at his interpretation that "sides" of the teeth of the rack, means the opposing flat sides of the rack, **which are not the tooth surfaces that engage the pinion pins themselves**. Applicant respectfully submits that the sides of the teeth to which Applicant refers, which do engage the pinion pins, are the tooth surfaces that are "substantially parallel" to one another, and which are perpendicular to the opposite directions of movements of the plate.

Applicant respectfully directs the Examiner's attention to the sketches of attached Exhibit A, which shows broken side illustrations of a representative tooth profile from the *Imase et al.* '989 patent reference (on the left) and of the tooth profile according to the rack and pinion invention of Applicant's instant application (on the right). As can be readily observed from Exhibit A, the teeth of the *Imase et al.* '989 patent reference are of constant curvature, and the only sense in which they may be considered parallel is that adjacent teeth are in a common plane (and thus the faces of the teeth - extending parallel to the plane of the drawing of Exhibit A - may be considered parallel to one another), and that their axes I, II, may happen to extend in parallel directions. In contrast, in the teeth of the rack of the invention of the instant application, not only are the teeth in a common plane, and the overall axes of the teeth parallel to one another (as is true for most rack and pinion arrangements), but also the sides of each tooth surface (e.g., sides A, B) that engage the pinion pins, as well the opposing side (e.g., sides B, C) of adjacent teeth, are parallel to one another.

Applicant respectfully submits that both in the ordinary sense of the term "substantially parallel", as well as in the specific context of the invention of the instant application disclosure, the tooth configuration of the *Imase et al.* '989 patent reference cannot be considered to have tooth sides (in the context discussed in the preceding paragraph) that are "substantially parallel" to one another, by one of ordinary skill in the art of machine design.

Notwithstanding the foregoing, and solely for purposes of further elaboration of the patentably distinguishing and enabling structure and mode of operation that is already recited in claims 1 and 15, Applicant has amended claims 1 and 15, as indicated, to specifically recite that the opposing sides of the teeth are the sides

comprising respective tooth surfaces that co-operate with the pinion pins to impart movement of said plate longitudinally in two opposite directions.

Clearly, no such structure is disclosed in either the *Bachmann et al.*, US 4,327,893 patent reference or the *Imase et al.* '989 patent reference, and accordingly, cannot be present in their combination, without further modification, nor is such a structure suggested by or in their combination.

Accordingly, Applicant respectfully submits that none of the prior art, including each of the *Bachmann et al.*, US 4,327,893 patent reference and the *Imase et al.* '989 patent reference, whether taken alone or in combination, teaches or suggests such patentably distinguishing structure. Accordingly, Applicant respectfully submits that claim 1 should be deemed to patentably distinguish over the cited combination of the *Bachmann et al.*, US 4,327,893 patent reference and the *Imase et al.* '989 patent reference. Reconsideration and withdrawal of the rejection of amended claim 1, and allowance thereof, are respectfully solicited.

Inasmuch as dependent claims 2 - 8 and 10 - 14, and 16 - 21 merely serve to further define the subject matter of amended independent claims 1 and 15, respectively, which independent claims should themselves be deemed allowable, these dependent claims likewise should be deemed to patentably distinguish over the cited prior art and be allowed. Accordingly, reconsideration and withdrawal of the rejections of claims 2 - 8 and 10 - 14, and 16 - 21, and allowance thereof, are respectfully solicited.

Applicant submits that the application, as a whole, is in a *prima facie* condition for allowance at this time, and reconsideration and allowance of the application, including all of claims 1 - 8 and 10 - 21, are accordingly, respectfully solicited.

Should anything further be required, a telephone call to the undersigned, at (312) 456-8400, is respectfully invited.

Respectfully submitted,
GREENBERG TRAUIG, LLP

Dated: February 13, 2008


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CERTIFICATE OF TRANSMISSION

I hereby certify that this AMENDMENT AND COMMUNICATION is being deposited with the United States Postal Service as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or is being facsimile transmitted to the USPTO, at fax number 571-273-8300, on February 13, 2008.


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